

# California Energy Commission



## **Presentation on Report to Governor: *Evaluation of Biomass-to-Ethanol Fuel Potential in California***

Pat Perez, Project Manager

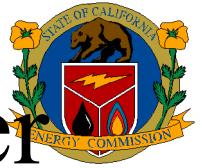
December 15, 1999

# Purpose of Today's Presentation



- Recap of project activities since Governor released Executive Order D-5-99 on 3/25/99
- Discuss changes made to October draft report
- Present major findings & conclusions
- Present recommendations to foster biomass-to-ethanol development
- Obtain comments and input on draft final report

# Governor Davis Executive Order



## **Executive Order D-5-99 (Item 11)**

- Evaluate the potential for development of a California waste-based or other biomass ethanol industry in California and,
- Evaluate what steps, if any, would be appropriate to foster waste-based or other biomass ethanol development in California should ethanol be found to be an acceptable substitute for MTBE.

# Recap of What Has Happened Since March 25, 1999



- Established Technical Peer Review Group.
- Released public draft reports in Aug & Oct.
- Held public workshop (Sept) and public hearing (Nov) to obtain input and comment on draft reports.
- Released recommended changes to October draft report on December 3, 1999.



# Changes to October Report

- Added discussion of Interagency Biomass Group
- Expanded market development and commercialization options to include:
  - Feedstock payment (credit) for waste biomass
  - Bond financing through California Alternative Energy Advanced Transportation Financing Authority

# Changes to October Report (cont d)



- Added discussion of Minnesota's ethanol incentive program.
- Developed producer payment incentive scenario for California.
- Identified existing statute (PR Code Section 25678) for production incentives for biomass ethanol.

# Changes to October Report (cont d)



- Updated and revised chapter on Economic Evaluation to capture additional modeling work.
- Reviewed and summarized three biomass benefits studies.
- Added discussion of biomass-derived transportation fuels and conversion processes.

# Changes to October Report (cont d)



- Included summary of comments received at November 19 Hearing.
- Updated information on California s biomass power industry.





## *Major Findings & Conclusions*

- Ethanol from wastes and residues offers potential for meeting the state's oxygenated gasoline needs.
- Renewable biomass-to-ethanol fuel production offers potential energy, environmental, and economic benefits.
- Creating a viable in-state ethanol industry to capture these benefits, however, poses a major challenge.
- Ethanol production remains costly, requiring continued government support.

# *Major Findings & Conclusions*

## *(cont d)*



- Developing a California ethanol industry will require a state government role to overcome economic, technical, and institutional barriers.
- California-produced ethanol will face stiff competition from out-of-state ethanol and in-state petroleum products.
- California's ethanol demand will be affected by both federal and state regulatory developments in progress.
- Commercializing biomass-to-ethanol technologies faces uncertainties and challenges.

# *Major Findings & Conclusions*

## *(cont d)*



- The lack of commercial experience with biomass-to-ethanol conversion suggests state participation in several planned projects as a near-term demonstration effort.
- Demonstrations would help confirm the benefits and drawbacks to siting, building, and operating such facilities in California.

# *Major Findings & Conclusions*

## *(cont d)*



- A clear, multi-faceted biomass-to-ethanol state policy to guide and coordinate actions can reduce challenges to developing this industry.
- Activities to encourage the production and use of ethanol fuel complements California's ongoing efforts to develop transportation energy alternatives.

# Recommendations to Foster Biomass-to-Ethanol Development in California



- The state should take several actions to develop a longer-term state policy and other strategies.

These actions are broken into 4 categories:

- Policy
- Research, development and demonstration
- Market development and commercialization
- Further study needs



# Policy Recommendations

- Develop a biomass-derived transportation fuels policy consistent with Energy Commission goals for the transportation sector.
- Consider adopting carbon-reduction goals.
- Consider adopting fuel-diversity goals for California's motor vehicles.

# Policy Recommendations (cont d)



- Develop a position on the long-term need for the federal alcohol fuels subsidy as it effects a biomass-to-ethanol industry in California.
- Consider changing the current waste-diversion/recycling credit limit of 10% to full credit for biomass-to-ethanol technologies.



# RD&D Recommendations

- Pursue joint funding opportunities for demonstration of several biomass-to-ethanol projects in the state.
- Develop a private/public partnership directed at improving the collection, transportation, and processing of feedstocks.
- Initiate advanced engine development projects that use biomass-derived transportation fuels.



# Market Development Recommendation



- If demonstration projects prove successful, determine whether additional state actions to support market development and commercialization are appropriate.

# Further Study Needs Recommendation



- Better quantify the costs and benefits of biomass-to-ethanol development in California.

# What Do We Need From You?



- Questions and Suggested Changes.
- Approval of the Final Report Today.